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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

INVENTOR(S) : Lalit K. Mestha, et al.
TITLE : **MODEL BASED DETECTION AND
COMPENSATION OF GLITCHES IN
COLOR MEASUREMENT SYSTEMS**
APPLICATION NO. : 10/000,379
FILED : October 31, 2001
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EXAMINER : George R. Koch
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REPLY BRIEF UNDER 37 C.F.R. §41.41

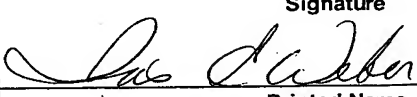
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Dear Sir:

This Reply Brief is being filed within two months of the January 18, 2007 mailing of the Examiner's Answer in the Appeal of the above-identified patent application.

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Response to Section (9) --Grounds of Rejections-- of the Examiner's Answer

Section 9 of the Examiner's Answer provides a restatement of the rejections presented in the Final Office Action, which was mailed November 3, 2005. The grounds of rejection are not new and are not designated as new. Accordingly, please see Applicants' Replacement Brief on Appeal under 35 C.F.R. §41.37, which was mailed December 6, 2006 and Applicants' Amendment D (After Final), which was mailed August 5, 2005 (not entered) for arguments responding to the repeated grounds of rejection.

Reply to Section (10) Response to Argument of the Examiner's Answer

As a general point, the Examiner takes the position that the Applicants' interpretation of the claims is narrower than warranted. The Applicants respectfully disagree.

As a general point, it is the position of the Applicants that "a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, to USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the . . . claim." *Richardson v. Susuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, ie., identity of terminology is not required. In *re Bond*, 9110 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990) (MPEP 2131).

It is respectfully submitted that the Office Action applies portions of the cited reference to portions of claim elements in a manner that is out of context and which ignores and/or truncates portions of the claim elements. In this regard, it is noted that the Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility indicate that "when evaluating the scope of a claim, every limitation in the claim must be considered. **USPTO personnel may not dissect a claimed invention into discrete elements and then evaluate the elements in isolation.** Instead, the claim as a whole must be considered. See, e.g., *Diamond v. Diehr*, 450 U.S. 175, 188-89, 209 USPQ 1, 9 (1981)." (for example, see the last paragraph in section II). Further in this regard, it is respectfully submitted that Wolf does not disclose, and the Office Action does not even assert that Wolf discloses, each and every element as set forth in

the claim; Wolf does not disclose, and the Office Action does not assert that Wolf discloses, the identical invention in as complete detail as is contained in the claims; and, Wolf does not disclose the elements arranged as required by the claim.

Additionally, the Examiner's Answer truncates and, thereby, mischaracterizes comments of the Applicants which were provided in the Appeal Brief.

For example, paragraph 2 of the Examiner's Response to Argument includes the assertion that "Applicant essentially argues that this correction is not the same as a signal replacement." It is respectfully submitted that this is a mischaracterization and a truncation of the position of the Applicants. As clearly asserted on page 9, of Applicants' Replacement Appeal Brief, near the end of the first paragraph, it is the position of the Applicants that Wolf does not disclose or suggest that the signal from the densitometer/spectrophotometer 70 is replaced.

It is the position of the Applicants that since Wolf does not disclose or suggest replacing the signal from the densitometer/spectrophotometer 70, Wolf does not disclose or suggest selectively replacing the measured color signal based on the color error value as recited in claim 1.

The second paragraph of the Examiner's Response to Argument goes on to assert that "since correcting one of the inputs or tables in Wolf results in a replacement of "the signal," the structures of Wolf meet the replacement function limitation." However, it is unclear which signal the phrase "the signal" in the Examiner's Response refers to. However, it is noted that the Examiner is not asserting that "the signal" allegedly being replaced is a measured color signal. Accordingly, it is respectfully submitted that Wolf does not meet or anticipate the element from claim 1 of --selectively replacing the measured color signal based on the color error value--.

Furthermore, it is noted that the first sentence of the second paragraph of the Examiner's Response to Argument asserts that Applicant "argues that Wolf 'does not disclose or suggest that the signal from the densitometer/spectrophotometer 70 is replaced under any circumstances.'" It is noted that the Examiner's Response to Argument does not take issue with this position of the Applicants. Accordingly, it is respectfully submitted that Wolf does not disclose or suggest that the signal from the densitometer/spectrophotometer 70 (i.e., a measured color signal) is replaced based on the color error value as recited in claim 1.

Instead of taking issue with that argument of the Applicants, the second paragraph of the Examiner's Response to Argument asserts that "Applicant does acknowledge that Wolf provides for a correction and directs the attention of the reader to lines 20-23 of page 9 of the Appeal Brief." However, that portion of the Appeal Brief refers to column 6, lines 44-58, of Wolf, which indicates that the low-density compensator provides a correction for the high-density compensator; together they provide color calibration and compensation for slow drift of the printer. It is respectfully submitted that disclosure of a low-density compensator providing a correction for a high-density compensator does not disclose or suggest selectively replacing a measured color signal based on a color error value as recited in claim 1.

The remaining sentence of paragraph 2 of the Examiner's Response asserts that "Applicant also acknowledges later in the Brief, at pages 10-12, that MAPP2, which processes the sensor signals, has transformation equations or tables are periodically updated." However, it is respectfully submitted that Applicants, including at pages 10-12, makes no such acknowledgement. Indeed, at lines 6 and 7 of the second paragraph on page 10, Applicants' Replacement Appeal Brief clearly states "while FIG. 1 depicts a signal from the sensor 70 delivered to the MAPP 2, that signal is not processed by or replaced by the MAPP 2." Lines 7-9 of the same paragraph indicate that "instead, the signal from the sensor is used to periodically update transformation equations or tables within the MAPP 2" and directs the attention of the reader to column 6, lines 3-15 and 27-33, of Wolf, in support of the assertion. It is respectfully submitted that disclosure of transformations or equations being updated based on a signal does not disclose or suggest replacing that signal. Moreover, disclosure of updating the transformation equations or tables in the MAPP 2 of Wolf does not disclose, suggest or anticipate selectively replacing the measured color signal based on color error value as recited in claim 1 of the present application.

For at least the foregoing reasons, Wolf does not anticipate the subject matter of claims 1-3 of the present application, and reversal of the rejections of the Final Office Action is respectfully requested.

Paragraph 3 of the Examiner's Response to Argument asserts that page 9-10 of Applicants' Brief further highlights the discrepancy between the various scope of "claim interpretation" and asserts that "Applicant essentially argues that "glitches or transient

errors” are not “drifts” and directs the attention of the reader to page 10, lines 15-19, of Applicants’ Replacement Appeal Brief.”

However, it is respectfully submitted that what is at issue on pages 9-10 of Applicants’ Replacement Appeal Brief is not a mere discrepancy between claim interpretations. Instead, the cited pages highlight portions of the claims and the disclosure of Wolf which the Examiner overlooks or mischaracterizes. For example, lines 15-19 of page 10, direct the attention of the reader to column 2, lines 1-11, and column 5, lines 19-38, of Wolf in support of the assertion that the signal from the densitometer/spectrophotometer 70 is not processed or replaced by the MAPP 2. The MAPP 2 does not detect glitches or transient errors in a measurement system or the sensor 70. Instead, the MAPP 2 provides a compensation for drifts associated with the printer 50.

While the Applicants do maintain that one of ordinary skill in the art would understand that “glitches or transient errors” are not “drifts”, that point is not at issue in the cited portion of page 10. What is at issue at the cited portion of page 10 is that the MAPP 2 does not process or replace a color measurement signal. The MAPP 2 does not detect errors in a measurement system and does not compensate for errors in a measurement system and disclosure of the MAPP 2 of Wolf does not anticipate the subject elements of claim 1 of the present application.

Paragraph 4 of the Examiner’s Response to Argument asserts that “Applicant does acknowledge that Wolf correct the equations and tables, and therefore meets the claim limitations.” However, the Applicants respectfully disagree.

The Applicants do not acknowledge that Wolf meets the claim limitations and page 11 makes no such acknowledgement. Instead, page 11 asserts that Wolf does not disclose or suggest a method of processing transient errors produced in a color measurement system monitoring a color process. Moreover, Wolf does not disclose or suggest comparing a measured signal to an expected color signal to produce a color error value or selectively replacing a measured color signal based on a color error value and presents claim 1 in underlined and bolded form to highlight portions of claim 1 which are clearly **not** disclosed, suggested or anticipated by Wolf.

Paragraph 5 of the Examiner’s Response to Argument asserts that “Wolf essentially compares a measured color signal (output from

densitometer/spectrophotometer 70) with input or expected signal (RcGcBc) to produce a transformation value which is an error signal.

However, the Response to Arguments provides no citation to Wolf disclosing or suggesting such a comparison.

Indeed, it is respectfully submitted that Wolf does not disclose or suggest comparing the measured color signal with an input or expected signal. Moreover, even if Wolf could be construed as disclosing such comparison, the expected signal recited in claim 1 is predicted based on a model and a monitored input. In the assertion and construction of the Examiner, the input and alleged expected signal are the same signal. Accordingly, the expected color signal alleged by the Examiner cannot be predicted based on a model and a monitored input as recited in claim 1 of the present application.

Furthermore, it is respectfully submitted that Wolf does not even disclose or suggest comparing the measured color signal from the densitometer with an input. Still further, even if Wolf could be construed as disclosing such a comparison, Wolf does not disclose or suggest selectively replacing the measured color signal based on the error signal that the Examiner alleges is produced through transformation. Yet further, it is respectfully submitted that the value produced through transformation in the system of Wolf is a compensated input signal and is not an error signal (column 6, lines 44-58).

The first two sentences of paragraph 5 of the Examiner's Response to Argument asserts that on page 12 of the Brief, "Applicant argues that Wolf does not disclose or suggest comparing a measured color signal to either the output of MAPP 1 or MAPP 2" but asserts that "this is not what the claim limitation calls for." However, the referenced portion of page 12 is simply taking issue with the assertion made in the rejection that Wolf discloses "3) predicting an expected color signal based on the model and monitored input (the outputs of MAPP 1 and MAPP 2)". It is respectfully submitted that this third element of the explanation for the rejection of claims 1-3 draws an analogy between the outputs of MAPP 1 and MAPP 2 as a predicted expected color signal. Accordingly, to anticipate the comparing the measured color signal to the expected color signal element of claim 1, Wolf would have to disclose comparing the output of "MAPP 1 and MAPP 2" to the measured color signal, which Wolf clearly does not disclose or suggest. Therefore, according to the analogy drawn by the Examiner in the

Final Rejection, Wolf does not disclose or suggest comparing the color measurement signal to the expected color signal to produce a color error value.

Paragraph 6 of the Examiner's Response to Argument characterizes the final paragraph of page 12 of the Reply Brief by asserting that "Applicant argues that Wolf does not disclose signal replacement."

However, this is a misrepresentation of the final paragraph of page 12. That paragraph indicates, beginning in the middle of the third line, that --the sensor signal is used to update values in the MAPP 2. However, the signal itself is **not** replaced with a substitute signal. Clearly the position of the Applicants is that the sensor signal is not replaced. Even if the transformation or table is fairly construed as replacing a signal (which is disputed), the transformation or table does not replace the sensor signal. In this regard it is noted that the Examiner's Response does not assert that the transformation or table does replace the sensor signal.

Paragraph 6 of the Examiner's Response goes on to assert that in response to the Applicants' argument that the references fail to show certain features of the Applicants' invention, it is noted that the feature upon which the Applicants rely (i.e., that the signal from the sensor is tested) are not recited in the rejected claims.

However, claim 1 clearly recites comparing (i.e., testing) a measured color signal to (i.e., against) the expected color signal to produce a color error value (i.e., test results). Accordingly, it is respectfully submitted that the feature referred to in paragraph 6 of the Examiner's Response is recited in the rejected claims.

Paragraph 7 of the Examiner's Response to Argument acknowledges the Applicants' request for a more precise citation with regard to the assertion of the Examiner that Wolf discloses replacing a measured color signal with a predicted color signal and directs the attention of the Applicants to column 4, lines 19-25, as well as lines 10-12 and 40-45.

However, while the first two portions of Wolf mention lookup tables, and the third citation (lines 40-45) discuss a conversion table described in another patent, none of the cited portions disclose or suggest replacing a measured color signal with a predicted color signal. It is respectfully submitted that the lookup tables discussed at column 4, lines 10-12 and 19-25, are for adjusting image data provided by the document creator 10 (column 3, line 41 - column 4, line 25). It is respectfully submitted that lines 40-45 of column 4 discuss one possible method for generating those tables (column 4, lines 36-

40). In any event, it is respectfully submitted that Wolf does not include and, accordingly, the Examiner has not identified a portion of Wolf that discloses or suggests replacing a measured color signal with a predicted color signal as recited, for example, in claim 2 of the present application.

Paragraph 8 of the Examiner's Response to Argument asserts that "Applicant argues that Balasubramanian-1996 and Wolf do not disclose using historical signals." However, it is respectfully submitted that the Applicants made no such argument.

With regard to claim 4, page 14 of Applicants' Replacement Appeal Brief asserts that claim 4 recites replacing the measured color signal with a historical signal based on a historical value related to the monitored input. It is respectfully submitted that Wolf, Balasubramanian-1996 and Stokes do not disclose or suggest replacing a measured color signal. Furthermore, it is respectfully submitted that Wolf, Balasubramanian and Stokes do not disclose or suggest replacing a measured color signal with a historical signal. Moreover, Wolf, Balasubramanian and Stokes do not disclose or suggest replacing the measured color signal with a historical color signal based on a historical value related to a monitored input.

Paragraph 9 addresses the Applicants' assertion that there is no motivation to combine Wolf, Balasubramanian-1996 and Stokes. The Examiner's Response to Argument asserts that "in this case, with respect to claim 4, motivation would have been generally available to one in the art. One in the art would appreciate that such models would be built on a large number of measurements and would thus provide optimal accuracy, at a tradeoff of which is increased complexity. Therefore, it would have been obvious of one of ordinary skill in the art at the time of the invention to have utilized such an empirical model in order to achieve optimal accuracy."

However, it is respectfully submitted that these assertions do not meet the burden of the Office to, in this case, suggest the motivation for combining the models allegedly disclosed in Balasubramanian-1996 and/or Stokes into the system and methods disclosed by Wolf. None of the references disclose or suggest comparing a signal with a sensor to a value from a model to determine if the sensor signal includes a significant error. Moreover, none of the cited references disclose or suggest selectively replacing the measured color signal based on the error by replacing the measured color signal with a historical color signal based on an historical value related to the monitored

input as recited in claim 4. Accordingly, the Final Office Action has not met its burden of presenting a *prima facie* case of obviousness.

Paragraph 10 of the Examiner's Response addresses claim 5 and, again, asserts that it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized such a model in order to achieve faster modeling of the printer function.

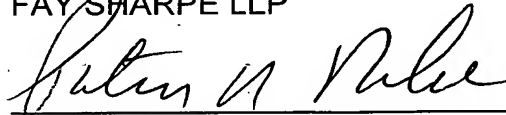
However, the Office Action and the Examiner's Response do not suggest a motivation to predict an expected color value based on the model and a monitored input and to compare a measured color signal to the expected color signal to produce a color error value and selectively replace the measured color signal based on the color error value as recited in claim 1 of the present application. Moreover, the Office Action and the Examiner's Response to Arguments do not suggest a motivation for using one of a refined parameterized Neugebauer model, a multi-dimensional numerical model and an online statistical parameterized model representative of the color producing process as recited in claim 5 for the purpose recited in claim 1 of the present application. Accordingly, the Office has not met its burden of presenting a *prima facie* case of obviousness, and claim 5 is not anticipated and is not obvious in light of Wolf, Balasubramanian-1996 and Stokes.

In response to paragraph 11 of the Examiner's Response to Arguments, it is respectfully submitted that the rejections of claims 4 and 5 are based on a misrepresentation or misunderstanding of Wolf and, accordingly, on a motivation to combine Stokes and Balasubramanian-1996 with Wolf that could only have been gleaned from the present application.

For at least the foregoing reasons, Wolf does not disclose each and every element as set forth in the claims, does not show the identical invention in as complete detail as required by the claims and Wolf does not arrange the elements as required by the claims. Accordingly, it is respectfully requested that the Examiner's rejections be reversed.

Respectfully submitted,

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